UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

VIA FEDERAL EXPRESS

REPLY TO THE ATTENTION OF

February 6, 1995

HSRL-6J

J.D. White
Kerr-McGee Chemical Corporation
123 Robert S. Kerr Avenue
Oklahoma City, OK 73102

Dear Mr. White:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the "Scoping and Planning Documents for the Removal Action at the Kerr-McGee Residential Areas Site, West Chicago, Illinois," submitted by Kerr-McGee Chemical Corporation on December 30, 1994. The documents are disapproved. Attached please find U.S. EPA's comments on and required modifications to the documents. In accordance with paragraph 31 of the Unilateral Administrative Order (UAO), Kerr-McGee is required to submit amended documents within fourteen (14) days of receipt of this letter. Failure to incorporate all required modifications shall constitute noncompliance with the UAO.

As a result of our January 18th technical review meeting in Chicago, Kerr-McGee already should be in the process of amending the documents. In order to facilitate that process, the attached comments provide major comments first, each of which may affect several different portions of the documents, followed by specific comments on a page-by-page basis. Please note that these comments are based on a review of the documents submitted by Kerr-McGee on December 30, 1994. Comments on the additional laboratory Standard Operating Procedures which Kerr-McGee submitted on January 26, 1995, will be forwarded to you shortly.

Please contact me at your earliest convenience if you have any questions regarding this letter or the attached comments.

Sincerely,

Rebecca Frey

Rebecca Frey
RPM/OSC
Office of Superfund

Attachment

cc (w/attachment): James Grant
Mark Krippel

bcc w/attachment:

M.Radell
L.Jensen
J.Mitchell
A.Turner, CH2M Hill
F.Petelka, CH2M Hill
R.Allen, IDNS
C.Morin, IEPA

U.S. EPA COMMENTS ON KERR-MCGEE'S SCOPING AND PLANNING DOCUMENTS FOR THE REMOVAL ACTION AT THE KERR-MCGEE RESIDENTIAL AREAS SITE

February 6, 1995

MAJOR COMMENTS

1. "On-Site" vs. "Off-Site" work: The scoping and planning documents appear to be written as if all proposed work will occur on-site, thus being exempt (under CERCLA) from the need for obtaining permits. As defined in ¶5.r. of the UAO, the "Site" is defined as those properties at which U.S. EPA determines Kerr-McGee shall perform work. Thus, all excavation and restoration work, including loading of trucks, that occurs on the affected properties or areas immediately adjacent to the affected properties is "on-site" and exempt from the need for permits. The transporting of waste materials to an off-site location, however, is an off-site activity. Kerr-McGee must obtain all necessary federal, state and local permits and authorizations for this and all other off-site activities.

2. "Processing" at the Rare Earths Facility (REF): CERCLA does not exempt off-site activities, such as "processing" at the REF, from the need to obtain any applicable State and local approvals. The City of West Chicago has indicated that it has the authority to approve such activities at the REF and will not approve such processing consistent with the settlement agreement entered between the City/State/Kerr-McGee. Until Kerr-McGee demonstrates that the City has approved such processing, all references to "processing" should be deleted from the scoping and planning documents.

3. Application of the Verification Criteria and ALARA: It appears that U.S. EPA and Kerr-McGee have substantially different philosophies on how the verification and ALARA criteria should be applied. When establishing the verification and ALARA criteria, U.S. EPA intended that all identified areas exceeding 5 pCi/g above background be cleaned up to so as not to exceed 5 pCi/g above background (or better with ALARA), allowing for limited exceptions. The exceptions, which are anticipated to be infrequent, are handled by following the 40 CFR 192 standard of averaging over 100 square meters. During the verification phase, U.S. EPA/IDNS will be applying the verification and ALARA criteria as described above, consistent with U.S. EPA's intent when establishing the Action Criteria for this site. In accordance with the requirements of the UAO/SOW, Kerr-McGee's Pre-Verification Screening Sampling Plan must be written to ensure that, if Kerr-McGee follows the methods and procedures in the plan, U.S. EPA/IDNS verification surveys will indeed confirm that the verification criteria have been met. Kerr-McGee proposes to leave "hot spots" of up to 15 pCi/g above background so long as the 5 pCi/g-above-background average over 100 square meters is met. This is unacceptable and will require additional excavation activities (except for limited exceptions). Therefore, the Pre-Verification Screening Sampling Plan must be revised substantially.

4. Definition of what is Acceptable Backfill Material (whether from on-site or off-site sources): Kerr-McGee proposes to use off-site and/or on-site soils as backfill material if they do not exceed the 5 pCi/g-above-background soil concentration action criterion established for this site. This is inappropriate and unacceptable. The SOW attached to the UAO states that excavations must be backfilled with clean material. Page 9 of the SOW states, "...to ensure that the material used to restore excavated properties is clean, meaning that the radiological...composition of the backfill material must be within background ranges for the Site as established by U.S. EPA during the first phase of the discovery/characterization fieldwork. Therefore, to be used as backfill, both off-site and on-site materials must be within the background range established by U.S. EPA (not 5 pCi/g above background). If Kerr-McGee encounters situations (which are expected to be infrequent) where it must excavate through clean soils to get to the contaminated soils, the "clean" soils may be used as backfill only if they fall within the background range. U.S. EPA will provide the relevant information on site-specific background levels to Kerr-McGee shortly.

SPECIFIC COMMENTS

1. General Comment: The title of the documents and the language throughout the documents should reflect the language of the UAO/SOW. Specifically, the removal action consists of three phases: the discovery and characterization phase, the excavation and restoration phase, and the verification phase. The scoping and planning documents should therefore reflect that Kerr-McGee will be implementing the excavation and restoration phase of the removal action at the Residential Areas Removal Site. Only a few examples of areas needing revision will be provided in the specific comments below, but this comment affects language in many places throughout the documents. (Kerr-McGee should particularly search for all areas that contain the phrase "Removal Action" or "Removal.")

2. General Format Comments: (a) The cover page for each individual document within the 3-ring binder should not have spaces for approval signatures. When the planning documents are approved by U.S. EPA, Kerr-McGee will be notified of the approval by letter. (The only exception to this is the Quality Assurance Project Plan, which must have approval signatures on the document. Also, please note that U.S. EPA does not approve Health and Safety Plans, but merely offers comments on such plans.) (b) The current cover pages of each document make it appear as if "U.S. EPA Region V Office of Superfund" prepared the documents; please revise or delete. (c) The cover pages and the header on each page identifies the revision number of the document. The initial submission to U.S. EPA should have been "Revision 0," so the revised documents submitted in response to these comments should be "Revision 1."

3. General Comment: The definition of the Residential Areas Removal Site in the UAO includes some Kress Creek properties. All of the documents submitted by Kerr-McGee have failed to include this consideration. Kerr-McGee must ensure that the documents cover all aspects of the Work for the entire Residential Areas Removal site, including residential floodplain soils along Kress Creek. The Work Plan must describe any special procedures and methods that will be used for the floodplain soils and for excavating near the creek banks.

4. General Comment: It is important that this document focus upon Federal regulations because this is a Federal cleanup. State rules should be applied only when they are more restrictive. Reliance upon the Illinois Administrative Code, 32 IAC 340, will give, in some instances, less stringent rules than the Federal rules (e.g., surface contamination criteria). It is not believed that 32 IAC 340 is ever more stringent than Federal rules.

REMOVAL ACTION WORK PLAN – DOCUMENT 100

5. Page 1-1, ¶1: Per specific comment #1 above, revise 1st sentence to "...work which will be done during the excavation and restoration phase of the removal action at the Residential Areas Removal Site (Residential Site) work." In 2nd sentence, delete "Initially, about 25 to 35" since the scoping and planning documents must address all the work at the Residential Site. Also, the term "low-level radioactive materials" is a term of art and as defined by statute and regulation does not include the mill tailings materials at this site. Different language should be used to avoid confusion.

6. Page 1-1, 2nd bullet: The bullet implies that the entire property will be resurveyed.

7. Page 1-2, ¶2: Clarify that only on-site work is exempt from permits, although on-site work must still comply with the substantive requirements of such permits. Off-site work is not exempt from permits.

8. Page 1-2, ¶2, last line: Change to "...shipped to and stored at the REF for ultimate shipment to the off-site disposal facility."

9. Page 2-1, §2.1: It would be helpful if this section gave a brief description of the three phases of the removal action (see specific comment #1 above).

10. Page 2-1, §2.1, ¶1: In the 1st sentence, "...on properties around the REF" is too vague and perhaps too limited. Change to "...on properties in and around the City of West Chicago." In the 2nd sentence, add the word "Removal" before "Site." In the 3rd sentence, change "Remedial Action" to "discovery and characterization phase of the Removal Action."

11. Page 2-1, §2.1, ¶2: Revise 1st sentence to "Properties will be scheduled for the excavation/restoration phase of the Removal Action..."

12. Pages 2-1 and 2-2, bullets: (a) Kerr-McGee should meet with the property owner, regardless of the status of the access agreement. Even if U.S. EPA has obtained access for Kerr-McGee to do the excavation/restoration work, Kerr-McGee must discuss the required work with the property owner, including the proposed restoration work. (b) Another bullet should be added for the step where Kerr-McGee notifies U.S. EPA that preverification survey work is complete, and requests a verification survey by U.S. EPA/IDNS. (c) The 7th bullet on page 2-2 should be revised to read, "U.S. EPA, or its designee, surveys the property, verifies that the excavation work has been completed, and notifies Kerr-McGee that backfilling the excavation may commence." (d) The 8th bullet should state, "Kerr-McGee backfills the excavation and completes restoration of the property..." (e) In the 9th bullet, what does "restoration criteria" refer to? Landscaping? Or the verification criteria which apply to the excavated area after backfilling? (f) In the 10th bullet, when will documentation be submitted to U.S. EPA – after completion of each property or at the end of the project?

13. Page 2-3, ¶3: Change 1st sentence to "U.S. EPA, through its Remedial Project Manager/On-Scene Coordinator (RPM/OSC), will provide..." In the next sentence and the next paragraph, change "Remedial Project Manager" to "RPM/OSC."

14. Page 2-4, last ¶, line 4: Change to "...and, if approved by the property owner, will extend to Kerr-McGee..."

15. Page 2-5, ¶1 and ¶2: Per specific comment #1 above, change "Removal Action(s)" to "excavation and restoration work." Also, at the end of ¶1, delete "themselves" – it is not necessary and appears to state that access is for U.S. EPA to do the work.

16. Page 2-5, ¶3: Change to "If the U.S. EPA did not obtain access for the excavation and restoration work when it obtain access for the studies, then Kerr-McGee..."

17. Page 2-5, ¶4, last sentence: Revise to, "At this time, U.S. EPA may make further efforts to obtain access..." Please clarify what "acceptance of the Removal Action by the property owner" means. Does it refer to acceptance by the property owner that the property has been properly restored?

18. Page 2-5, §2.4, ¶1, line 6: U.S. EPA will define the impacted area, but not the precise boundaries where excavation work is required. The general shape and location of the deposit will be identified, but KM must verify the precise area. (This is correctly stated on page 4-1, ¶2, line 1.)

19. Page 2-5, §2.5: Reference is made to Section 1.1, but no such section exists.

20. Page 3-1, ¶1: The phrase "and the extent of waste materials on each property" appears twice.

21. Page 3-1, ¶2: Clarify that U.S. EPA or its designee will survey the property to verify that the work has been completed and meets the verification (cleanup) criteria. The property owner will be involved in verifying that the restoration work meets his/her satisfaction.

22. Page 4-1, ¶1: Delete the phrase "approximately 25 to 35 properties." Add "provided by U.S. EPA" after "initial list."

23. Page 4-1, ¶2: Revise the last sentence to "...restoration of all areas disturbed by excavation activities, after U.S. EPA has notified Kerr-McGee that the property may be restored."

24. Page 4-1, ¶3: This paragraph states that "some" removal and restoration of lawns is anticipated. It would appear that the majority of the work will occur in residential yards, thus requiring the removal and restoration of lawns. In the last sentence, change "Securit" to "Security,".

25. Page 4-2, ¶2, line 1: Delete the word "early."

26. Page 4-2, ¶4, last line: State that contractor qualifications also will be submitted to U.S. EPA.

27. Page 4-3, ¶1, line 3: Change "site-specific" to "property-specific."

28. Page 4-3, §4.1.1.1, ¶2, line 2: There should be stronger language regarding what constitutes acceptable work, including such things as a (one-year) warrantee for the restoration work.

29. Page 4-3, §4.1.1.2, ¶1: Per major comment #1 above, at the end of the 2nd sentence, add "for on-site activities, although compliance with the substantive requirements of such permits is still required. All applicable permits and authorizations are required for off-site activities." It is Kerr-McGee's responsibility to ensure that it identifies and obtains all such required permits/authorizations. Revise the rest of the section accordingly.

30. Page 4-3, §4.1.1.2, ¶1: The term "hazardous" usually implies RCRA hazardous, in which case TSD must be addressed. If this is not the intent, please clarify.

31. Page 4-4, 2nd bullet: The 2nd sentence appears to say the same thing as the 1st sentence.

32. Page 4-4, 1st ¶ after bullets: U.S. EPA surveys provide only minimal (if any) information on vertical extent of contamination.

33. Page 4-5, §4.1.1.4.2, ¶1: Although removal or decontamination of major structures is not included in the current scope of these planning documents, such work may very well end up being necessary at some point during the work. Revise this section to explain why such work is not currently planned for (e.g., such work was rare during the mid-1980s cleanup, and may not be required during this work). In addition, revise to clearly state that if such work is required, Kerr-McGee will prepare and submit (for U.S. EPA review and approval) supplemental or amended planning documents covering such work. (See, for example, the language on page 01010-7 of Document 301.)

34. Page 4-5, §4.1.1.4.2, 1st bullet: Revise timeframe to be more definite – either one day or two. Lack of specificity will cause implementation problems. Extended closures could lead to demands for loss of business payments. Doors required for fire safety must remain unblocked and useable at all times.

35. Page 4-6, §4.1.1.4.3: This section states that efforts will be made to retain structures such as patios. However, if it is known that contamination exists under a patio, the contamination should be removed, as the patio may be removed in the future and the contamination then exposed.

36. Page 4-6, §4.1.1.5: In ¶4, line 2, clarify that "upgradient" and "downgradient" are referring to elevations. (Also applies to page 4-7, 2nd bullet.) Regarding the end of the ¶, what are the regulatory requirements for transport of wastewater? Is the REF licensed to accept it?

37. Page 4-7, §4.1.2: This section should be entitled "Excavation and Restoration Work." Also, this section says that the individual work orders will be provided to U.S. EPA for review and approval, yet elsewhere, the document states that the work orders do not require U.S. EPA approval. While it may not be necessary for U.S. EPA to formally approve each and every individual work order, Kerr-McGee must submit all work orders to U.S. EPA in advance of that work, and if U.S. EPA requires changes to the proposed work as described in the work order, Kerr-McGee must revise the work orders accordingly.

38. Page 4-7, §4.1.2.1: More detail is needed on how Kerr-McGee will make estimates of the vertical extent of contamination.

39. Page 4-8, prior to ¶4: The work plan does not describe the procedures Kerr-McGee will use to notify U.S. EPA that Kerr-McGee believes excavation work is completed and to request a verification survey. Such information must be included in the work plan (see page 7 of SOW).

40. Page 4-8, ¶4, line 2: Clarify what type of survey will be conducted – a radiation survey, or an elevation survey?

41. Page 4-8, ¶5, line 7: Delete the word "processing" so the sentence reads, "Within the REF, soils will be managed and eventually transported offsite for disposal under the requirements of the license granted by the IDNS."

42. Page 4-8, last ¶, sentence 6: Delete the 1st half of the sentence so the sentence reads, "Garden hoses and small spray nozzles..."

43. Page 4-9, ¶1, last line: Delete the word "initial."

44. Page 4-9, §4.1.2.2, ¶1: See comment #33 above. Revise to state that although demolition of all or part of buildings currently is not anticipated, if such work is found to be necessary, Kerr-McGee will prepare and submit (for U.S. EPA review and approval) supplemental or amended planning documents covering such work.

45. Page 4-9, last ¶: Specify that the walls that will be cleaned are exterior walls if that is the intent.

46. Page 4-10, last ¶: What procedures will be used to ensure that all shipments of radioactive material between the properties and the REF will comply with the applicable DOT regulations for bulk shipment of LSA? Later in the documents, SOP-WCP320 describes the "exclusive use" provisions, but does not detail how the trucks will be monitored to ensure that the provisions are implemented.

47. Page 4-10, last ¶: This paragraph states that the beds of the trucks will be sealed or lined, but fails to state that tarps will be used to cover the contaminated materials being transported. (Appendix A of the Construction Quality Assurance Project Plan states that such tarps will be used [page 1020-7 of Document 301].)

48. Page 4-11, 1st bullet: This bullet states that the criteria used to select truck routes are described in Section 4.3 and Appendix D of the Work Plan, but no such criteria are apparent. Such criteria should be included.

49. Page 4-11, 1st ¶ after bullets: In the 1st sentence, delete the word "processing" so it reads, "...for ultimate shipment to Envirocare..." Also, this paragraph should state that

further approval from IDNS will be requested in the event larger volumes must be accommodated. In addition, delete the 5th sentence and the 1st word of the 6th sentence.

50. Page 4-11, 2nd ¶ after bullets: Revise the last sentence to read, "Within the REF, final management and disposition of the materials will be as required by the REF license and in accordance with any other applicable state and local provisions."

51. Pages 4-11 and 4-12: The Work Plan does not describe the procedures Kerr-McGee will use to notify U.S. EPA that Kerr-McGee believes excavation work is completed and to request a verification survey. Such information must be included in the Work Plan (see page 7 of SOW).

52. Page 4-12, §4.1.3, ¶3: Reference is made to "excavation crews." Shouldn't it be "restoration crews," and shouldn't information regarding excavation crews be in §4.1.2?

53. Page 4-12, ¶4: The last sentence of this paragraph could be interpreted to mean that REF soils could be brought from the REF to this site for use as backfill. This is unacceptable. Please rephrase to clarify that this is not the intent.

54. Page 4-12, ¶5, line 6-7: Revise to read, "...see Section 02840 in Attachment A of the CQA Plan."

55. Page 4-13, ¶4: This paragraph must be deleted or revised. Municipal and public properties will very likely be included in the site work, and the CQA Plan should address this likelihood now.

56. Page 4-13, last ¶: In the last sentence, it appears that the reference should be to "Part 2" of the Work Plan.

57. Page 4-15, §4.2.6, ¶2: Change the phrase "November through April" to "December through March." December 1 through March 31 is the period of time when work most likely will not be conducted due to winter weather. Change the phrase "will not be performed during this period" to "is not expected to be performed during this period."

58. Page 4-15, §4.3, ¶2: Please provide specific references to the other sections of the Work Plan that are mentioned here.

59. Page 4-15, §4.4, ¶1: Please provide specific references to the other sections of the Work Plan that are mentioned here.

60. Page 4-16, §4.4: How will the open excavations be secured during non-operational hours? Will the excavations be covered with tarps? Will heavy equipment or trucks be left on-site or taken to a secure off-site location? If left on-site, will they have been decontaminated before the end of the day and how will they be secured?

61. Page 4-17, §4.5.2.1, ¶1: Revise to reflect that the constituents of concern are the entire decay series, but that measurements will be made for Ra-226 and Ra-228 because that is what the U.S. EPA-established criteria are based on.

62. Page 4-17, §4.5.2.1, ¶2: Direct gamma radiation/external exposure is also an exposure pathway, and is the dominant pathway for the materials at this site.

63. Page 4-18, §4.5.3, ¶2: In line 2, "workers" should be "worker's."

64. Page 4-18, §4.5.3, ¶3: Training should also be provided to local emergency personnel who may be called upon to respond to any emergencies at excavation locations.

65. Page 4-18, §4.5.5, ¶1: Revise the 1st sentence to read, "The discovery/characterization investigations done by the U.S. EPA to identify contaminated areas and the investigations done by Kerr-McGee as part of the site preparation work will indicate the radiological conditions to be encountered..." Note that while U.S. EPA conducted some chemical analyses of samples during the first few months of the discovery/characterization work, the analyses was limited to the metals barium, chromium and lead to determine if these metals should continue to be considered contaminants of concern. U.S. EPA has verbally indicated to Kerr-McGee that the results indicate that metals are not contaminants of concern at the site because they are below health-based levels. On the whole, U.S. EPA will not be providing data to Kerr-McGee on the "chemical conditions" of the properties.

66. Page 4-19, §4.6.1.1: (a) There must be a rapid turnaround time on air sample results so that changes can be made promptly to work practices and dust control measures if need be. (b) Excavation areas that are not adjacent should be treated as separate work areas, with independent monitoring. (c) This section states that air monitoring stations will be placed downwind of the remediation area, but page 5 of Appendix B (Air Monitoring Plan, Document 102) states that they will be upwind and downwind.

67. Page 4-20, §4.6.2: Storm events may produce surface water runoff from excavation areas. Surface water monitoring may be appropriate.

68. Page 4-20, §4.7, ¶3: Revise the 2nd sentence to read, "...unless Kerr-McGee has demonstrated and U.S. EPA has concurred that particular circumstances..." Also, "demonstrate" in line 3 and "considering" in line 9 are misspelled.

69. Page 4-21, §4.8.2, ¶2, line 1: Replace "machine" with "instrument". Also, the instrument maker (TM holder) should be referenced.

APPENDIX A, DUST CONTROL PLAN – DOCUMENT 101

70. Page 1, §1.0, ¶1: Revise to state that the Dust Control Plan also contains the corrective measures to be used in the event visual dust is created or air monitoring shows excessive particulates.

71. Page 1, §2.0, ¶2: The use of AP-42 is inappropriate here, as it does not contain any regulatory standards to violate. AP-42 lists emission sources, methodologies and typical releases, not limits.

72. Page 1, §4.0, ¶1: U.S. EPA approval would also be needed for the use of other dust suppressants if not in the approved Work Plan.

73. Page 2, §5, General: Revise this section to include provisions for cleaning trucks and truck tires before leaving the property, and for cleaning up any dirt which is tracked onto streets.

74. Page 2, §5.3: This section states that trucks will be equipped with truck bed covers, but does not state that the trucks will be covered once loaded, as stated on page 1020-7 of Document 301.

75. Page 3, bullets: These bullets, which describe the conditions under which water will be applied, all depend on visible dust generation as a trigger. Water should be applied to PREVENT the generation of visible dust, not just as a response to visible dust. Revise the bullets to reflect this change. (This is correctly stated in the 2nd ¶ after the bullets.)

76. Page 3, 1st ¶ after bullets, line 7: The 1st "or" should be "of."

APPENDIX B, AIR MONITORING PLAN – DOCUMENT 102

77. Page 1, §2.0, ¶1, lines 2 and 3: Change "Consent Order" to "UAO." Change "Quality Assurance Work Plan" to "Quality Assurance Project Plan."

78. Page 2, ¶1: Revise to reflect the fact that 32 IAC 340 was revised by IDNS on January 1, 1994, with new values corresponding to the new 10 CFR 20.

79. Page 2, ¶2 (and Page 7, Table 1): Which solubility class(es), and hence concentration limit, will be applied for nuclides with more than one listed solubility class?

80. Page 2, ¶2, last line: Delete "are" or change to "which are."

81. Page 2, §3.1, ¶2: The 1st listed objective should be reworded, as it sounds like an experiment to see how high dust emissions can get.

82. Page 3, §3.2, ¶1, line 11: Revise to state that trucks used to transport excavated material will be equipped with truck bed covers.

83. Page 3, §3.2.1, ¶2: Add the phrase, "Without dust control measures," at the beginning of the 1st sentence.

84. Page 3, §3.3.1, line 6: Delete the phrase "the Region V office of." While U.S. EPA has established ambient air quality standards, it was not the Region that established the standards.

85. Page 4, §3.3.2, ¶3, line 2: The analysis does not indicate that the unit dust rate is conservative. The obvious conclusion is that the rate at this site should be similar to the REF.

86. Page 4, §3.3.2, ¶4: This discussion is not appropriate since a "unit" dust generation rate was developed. This rate is independent of area and time. No data are presented to show that the actual dust generation rate will be less than that modeled.

87. Page 5, ¶1 and ¶2: The last sentence of each of these paragraphs directly contradict each other. These sentences also contradict page 2-3 of the Field Sampling Plan, which states that daily weather information from the REF will be used to determine locations of the air monitoring stations. (§5.1.2 of the Air Monitoring SOP (Document 212) also states that wind direction will be determined on a daily basis using meteorological information from the REF.)

88. Page 5, §3.5, ¶1: This ¶ mentions monitoring for radon gas, which is not mentioned elsewhere in the document. It should be deleted. Also, the last sentence appears to be missing some words.

89. Page 5, §3.5, ¶3: Will the air monitors be placed upwind and downwind, or just downwind (as stated in §4.6.1.1 of Document 100)?

90. Page 5, §3.5, ¶3, last sentence: Excavation areas that are not adjacent should be treated as separate work areas.

91. Page 6, §4: No discussion is provided concerning action guide levels or action(s) to be taken when these levels are exceeded.

92. Page 6, §4.1.1: Will the placement of the air monitors be determined when preparing the individual work orders, and if so, how will adjustments be made for shifts in wind direction?

93. Page 6, §4.1.2: The air sample collection methodology cannot be adequately reviewed without the examination of the supporting calculations. Please indicate in which of the submitted documents the calculations can be found. Also, for Clean Air Act compliance at the REF, air monitors had to be adjusted, reoriented, and relocated because they did not meet U.S. EPA siting guidelines. Samplers used here should also meet these U.S. EPA guidelines to every extent possible (e.g., height off ground, proximity to structures, direction of sampling head, etc.).

94. Page 6, §4.1.2, ¶1: Either change the reference to the REF to this site, or explain why the analysis from the REF remediation is relevant to this action. The cited SOP is incorrect, as SOP-213 is "Data Reduction...", and does not discuss air monitoring.

95. Page 6, §4.1.2, ¶3: The phrase "according with" should be either "according to" or "in accordance with."

96. Page 7, Table 1: The 32 IAC 340 values used here were revised by IDNS on January 1, 1994, with new values corresponding to the new 10 CFR 20. This table should be corrected.

APPENDIX C, PERMITTING AND ACCESS PLAN – DOCUMENT 103

97. General Comment: As stated in major comment #1 above, the transporting of waste materials to the REF is an off-site activity, so Kerr-McGee must obtain all necessary federal, state and local permits and authorizations for transporting of waste materials and any other off-site activities. The Permitting and Access Plan must identify all such required permits and authorizations.

98. Page 2, §3.1, ¶1: Revise 2nd sentence to "Under Superfund, Kerr-McGee is exempt from obtaining federal, state or local permits for on-site work, although on-site work must still comply with the substantive requirements of such permits. All applicable permits and authorizations are required for off-site activities."

99. Page 3, ¶1, line 4: Change "...be finalized within 30 days of the effective date of issue of the UAO. Compliance with the..." to "be submitted to U.S. EPA within 30 days of the effective date of the UAO. Once approved by U.S. EPA, compliance with the..."

100. Page 3, ¶2: Delete "Kerr-McGee and the U.S. EPA have agreed that" from the 1st sentence. Change the 2nd sentence to "...for a license amendment allowing storage and ultimate shipment of off-site materials..."

101. Page 3, ¶3: Delete the phrase "processed with other materials at the REF and" from the 1st sentence. Revise 2nd sentence to read, "The handling and preparation for shipment of excavated materials at the REF..."

102. Page 3, ¶4: Delete the sentence that begins "The legal basis..." and delete the first word of the following sentence.

103. Page 3, last ¶: IEPA should be added to the list of authorized personnel.

104. Page 4, ¶1: The length of time for document retention is specified in ¶65 of the UAO. Revise to be consistent with the requirements of the UAO. Also note that the UAO contains notification requirements prior to the destruction of any documents after the required holding time.

105. Page 4, §3.2, ¶1: Delete the 2nd sentence of this paragraph, as this language was not included in the final SOW issued with the UAO.

106. Page 4, §3.2, ¶3: Change "U.S. EPA has agreed to use its best efforts to obtain..." to "U.S. EPA has indicated that it will attempt to obtain..." in the 1st sentence. In line 3, change "phases" to "phase." In line 7, change "Removal Action" to "excavation and restoration phase work."

107. Attachment B of Document 103 (Sample Kerr-McGee Letter Requesting "Consent for Access to Remediate Property"): This letter must include the language required by ¶60 of the UAO. Also, will the owner/resident be responsible for watering restored lawn areas and plantings? If so, this responsibility should be noted on the form.

APPENDIX D, TRAFFIC CONTROL PLAN – DOCUMENT 104

108. Page 1, §1.0: The purpose should also be to protect workers from traffic accidents if work is required on or near roads or sidewalks.

109. General Comment: The traffic control plans should be coordinated with the City so local emergency personnel can plan appropriate access routes accordingly. If any streets or alleys are to be closed, prior notice should be provided to the City so rerouting of traffic can be accomplished with the least traffic disruption.

APPENDIX E, SITE SECURITY PLAN – DOCUMENT 105

110. Page 2, last ¶: If excavations left open during non-operational hours have high levels of contaminants exposed, a guard should be used as an additional security measure. (Also applies to §4.4 of Work Plan.)

APPENDIX F, PRE-VERIFICATION SCREENING SAMPLING PLAN – DOCUMENT 106

111. Page 1, §1.1, line 2: Revise to read, "...will be used by Kerr-McGee to demonstrate..."

112. Page 1, §1.3: Revise to reflect that the constituents of concern are the entire decay series, but that measurements will be made for Ra-226 and Ra-228 because that is what the U.S. EPA-established criteria are based on.

113. Page 1, §1.4: In the 2nd bullet, indicate that the SOW is Attachment 1 of the UAO. The Action Criteria Document (Nov.93) is missing from the list of references and must be added.

114. Page 3, §2.0: Several places in this section refer to grids that already will have been established by EPA. EPA is not using grids during the discovery and characterization phase, but is conducting gamma surveys over 100% of the accessible surface area of properties.

115. Page 3, §2.1.1, last bullet: Figure 1's heading (on page 7) does not agree with the heading listed here.

116. Page 4, §2.2: Kerr-McGee's proposal would allow "hotspots" of up to 15 pCi/g total radium above background to remain. This is contrary to U.S. EPA's intent in applying the verification and ALARA criterion. (See major comment #3 above.) This section must be revised to provide U.S. EPA with a reasonable assurance that, after official verification surveys are conducted, additional excavation activities will not be found to be necessary. Except for limited exceptions where averaging over 100 square meters may be appropriate, Kerr-McGee must excavate all identified areas that exceed 5 pCi/g above background.

117. Page 4, §2.2, ¶2: This ¶ states that Kerr-McGee will use a 10-meter by 10-meter grid, or smaller grids as directed by the Field Team Leader. In many instances, use of a 100 square meter grid would be grossly inappropriate, especially for excavation areas that are much smaller than 100 square meters. In addition, if Kerr-McGee elects to use different radiation detection instrumentation than that used by U.S. EPA, then Kerr-McGee cannot use the radium correlations being developed by U.S. EPA. Also, the

surveys performed by U.S. EPA do not correlate total radium concentration to gamma dose, they correlate radium to a counts per minute measurement as measured a few inches from the ground surface.

118. Page 4, §2.2, ¶4: Delete the first sentence of this ¶. Background will be as determined by U.S. EPA, not from some published value, and will not be in terms of μR/hr. Additionally, the use of the mean plus three standard deviations represents too wide a range for background and is unacceptable. U.S. EPA will establish how background will be defined, and will provide the results of the background studies to Kerr-McGee prior to approval of the planning documents so the appropriate values to be used can be incorporated into the documents.

119. Page 5, §2.2.3, ¶2: Insert the word "with" after "in accordance" in line 1. The instrument calibration procedures were not included in the Field Sampling Plan (Document 201).

QUALITY ASSURANCE PROJECT PLAN – DOCUMENT 200

120. General Comments: (a) The analytical procedures (gamma spec) for Ra-226 and Ra-228 were not included in the documents submitted for review on December 30, 1994. (b) A background air sampling plan (method) should be provided for review. (c) Throughout the QAPP references to air sampling volumes are not consistent.

121. General Format Comments: (a) The signature page needs to include a line for James Mitchell, U.S. EPA Region 5 Radiation Quality Assurance Coordinator. Space for dates of signatures also must be provided. (b) All the appendices to the QAPP should be clearly labeled as such on the tabs for ease in locating them. Also, another tab is needed at the beginning of Appendix C (SOPs) that identifies it as such. (c) A list of all the SOPs included in Appendix C must be listed in the table of contents at the beginning of the QAPP. (d) Any "Additional SOPs" that aren't officially a part of the QAPP need to have a separate index at the beginning of that section. (e) Many places in the QAPP refer to methods (e.g.) that are included in or will be done in accordance with "Appendix C." Specific references to specific SOPs must be provided rather than such general statements.

122. Page 1-1, §1.0: The contaminants of concern should be enumerated within this section.

123. Page 1-2, §1.3.1, ¶3: The definition of the Residential Areas Removal Site in ¶5.r. of the UAO includes some Kress Creek properties. Revise accordingly.

124. Page 1-3, §1.3.3: The "Removal Phase" bullet should be changed to "Excavation and Restoration Phase."

125. Page 1-4, 1st ¶ after top bullets: VOCs were not evaluated during the discovery and characterization phase. This ¶ should be deleted.

126. Page 1-4, 2nd ¶ after top bullets: Revise this section to indicate that U.S. EPA evaluated levels of barium, chromium and lead during the first few months of the discovery/characterization work to determine if these metals should continue to be considered contaminants of concern. Also, indicate that U.S. EPA has verbally indicated to Kerr-McGee that the results show that metals are not contaminants of concern at the site because they are below health-based levels.

127. Page 1-5, §1.3.4: Does "xxx check" represent a note to internal Kerr-McGee reviewers?

128. Page 1-6, §1.3.7, last ¶: Delete the phrase ", consistent with the requirement to maintain a steady workflow and minimize employee dislocations,". There is no such requirement in the UAO/SOW.

129. Pages 1-8, 1-9 and 3-3, Tables 1-1, 1-2 and 3-1: Low volume air monitoring stations are identified as the sample collection method. However, the Field Sampling Plan states that a high volume air station will be used. The Air Monitoring SOP (Document 212) does not cite the method by title but the procedure indicates the flow rates should be between 1-2 cfm which is a low volume. Clarify.

130. Pages 1-8 and 3-3, Tables 1-1 and 3-1: For footnote (b), please clarify that these are two separate sampling locations (minimum) per property or work area, and specify the number of hours per day of operation and that filters will be changed daily. Footnote (d) does not appear to be appropriate for the row entitled "Backfill Sampling (Offsite Source)."

131. Page 2-1, §2.1: In heading and 1st line, change to "Remedial Project Manager/On-Scene Coordinator." Elsewhere throughout the document use the term "RPM/OSC."

132. Page 2-1, §2.3: State whether the Offsites Manager will be onsite daily.

133. Page 2-2, §2.6: State whether the Quality Assurance Supervisor will be onsite daily. Also, the last sentence of ¶1 should introduce the bullets, which currently have no obvious relation to the text.

134. Page 2-3, §2.8: Please change this Section to read "U.S. EPA Region 5 Radiation Quality Assurance Coordinator has the responsibility to review and provide recommendation for approval to the U.S EPA RPM/OSC."

135. Page 3-1, §3.1: (a) In this section, duplicates refer to the field team members taking a composite of a soil sample and splitting the sample for laboratory analysis. Page 4 of the Air Monitoring SOP (Document 212) refers to duplicate (replicate?) sampling as counting the same sample twice. Clarify. (b) Duplicate samples (soil) should be sent to the laboratory as blind samples. (c) A precision objective should be stated for (field) duplicate analysis. Also discuss the method that will be used to evaluate field sampling precision. (d) Consider including replicate analysis for soil samples to evaluate the reproducibility of radiological data.

136. Page 3-1, §3.2: "Sensitivity" is not discussed in the "Accuracy, Precision, and Sensitivity of Analysis" section.

137. Page 3-3, Table 3-1: A TSP collection and analysis procedure should be provided for review. (Include as part of an Appendix.) In addition, minimum detectable levels should be defined for gross alpha and gamma spectroscopy.

138. Page 3-4, Table 3-2: A precision objective should be defined for (field) duplicate analysis. In addition, the acceptance/rejection criteria for onsite and offsite backfill material should be defined. (This would include defining a radionuclide background range for all backfill material, which is discussed elsewhere in these comments.)

139. Page 5-1, §5.1: The SOP numbers do not correlate with the listed names. Revise to read, "...are described in Appendix C of this QAPP, in SOP-211, Chain of Custody Procedures; SOP-215, Field Logbook Procedures; and SOP-218, Sample Handling..."

140. Page 5-1, §5.2: Laboratory SOPs were not provided for review.

141. Page 5-1, §5.3: What happens to the evidence files after the REF is no longer there?

142. Page 6-1, §6.1.1: The daily calibration procedure for the alpha counter should be included for review.

143. Page 6-2, §6.2: The calibration record and management procedures have not been provided for review.

144. Page 7-1, §7: Revise to read, "Soil samples will be analyzed for Ra-226 and Ra-228 by the REF laboratory." Also, clarify that samples splits will be performed in the lab at

the REF, not in the field. Also state that split samples can be provided to U.S EPA or IDNS upon request.

145. Page 8-2, §8.3.2: The laboratory quality control checks and acceptance criteria discussed in this section (i.e. spikes, surrogate spikes) should be defined in Section 3 of the QAPP. Also, the use of interlaboratory comparison samples should be included in the list of quality control checks.

146. Page 9-1, §9.1: Please reference the Field Logbook SOP (Document 215).

147. Page 10-1, §10.1 and §10.2, ¶3: External audits would be conducted by U.S. EPA Region 5 Air and Radiation Division personnel.

148. Page 12-1, §12: Include the equation that will be used to assess field duplicate compliance.

149. Page 12-1, §12.2.1, ¶2, last line: It is not appropriate to use the results from the Kerr-McGee laboratory to develop the target value for known samples. Since the Kerr-McGee laboratory is being tested, the known or control value will be determined by IDNS and/or U.S. EPA NAREL. The control value should be blind to Kerr-McGee; IDNS or EPA will perform the comparison.

APPENDIX A, FIELD SAMPLING PLAN – DOCUMENT 201

150. General Comment: A background air sampling scheme should be discussed in the Field Sampling Plan. This scheme should also be part of the Work Plan.

151. Page 1-1, ¶3: Revise the "contaminants of concern" discussion and metals discussion to be consistent with earlier text (as revised by these comments).

152. Page 2-1, §2.1, ¶2: Revise the 1st sentence to read, "...to assure that soil used as backfill is clean." The UAO/SOW clearly states that material used to restore excavated properties must be clean, meaning within the background range for the site as established by U.S. EPA.

153. Page 2-1, §2.1, bullets: The text here states that high volume air samples will be used during the air sampling program, while Table 2-1 of the QAPP states that low volume air samplers will be used. Clarify.

154. Page 2-2, ¶2, line 3: The sampling of on-site soil to be used as backfill is not an informal activity and would best be performed during excavation or immediately after

placement. Contemporaneous sampling would allow the accessibility to all soils and should lead to more representative results.

155. Page 2-2, ¶5: SOP-212 is incorrectly cited. It appears the correct reference would be SOP-214, Soil Sampling.

156. Page 2-2, ¶6: One sample from each off-site borrow source for each 20,000 yd^3 seems far two few samples to collect. Kerr-McGee must either increase the number of samples or provide convincing justification that one sample can adequately represent 20,000 yd^3 of soil. (This comment also applies to page 2-4, bottom of page.) Also include the method that describes how the borrow soil will be sampled.

157. Page 2-3, §2.2.1, ¶2: See comment #153 above (re: high-volume air samplers).

158. Page 2-3, §2.2.1, ¶4: Specify where Kerr-McGee's Radiation Protection Manual can be found. Also, SOP-213 is incorrectly cited. It appears the correct reference would be SOP-212.

159. Page 2-3, §2.2.1, ¶5: Revise to state that the number of air monitoring stations used will depend on the size of the remediation area, but that a minimum of two air monitoring stations will be located in each remediation area. For large excavation areas, two monitors is too few. Specify the number of monitors proposed for varying-sized excavations. For remediation areas that are comprised of groups of properties, specify that the groups of properties must also be contiguous, eliminating the possibility that multiple, widely-separated excavations undergoing work at the same time could be monitored by a single sampling array. Also, change "may be subject to review and approval by the EPA" to "will be subject to review and approval by the EPA" in the last line.

160. Page 2-4, §2.2.2, ¶4: SOP-212 is incorrectly cited. It appears the correct reference should be SOP-214.

161. Page 2-4, §2.2.3, ¶2: The 1st sentence should be revised, as this IS the Field Sampling Plan. (Also, see comment #156 above re: sampling frequency of borrow sources.)

162. Page 2-4, §2.2.3, last ¶: The UAO/SOW defined what is acceptable (clean) backfill material. Backfill material must be within the background range established by U.S. EPA. (This information will be provided to Kerr-McGee shortly.) Material above this background range is not acceptable for use as fill. Revise this section accordingly.

163. Page 4-1, §4.1: Will personnel ever wear disposal boots or gloves? If so, address in this section.

164. Page 4-1, §4.3: A word seems to be missing from item 1.

APPENDIX B, JOB DESCRIPTIONS -- DOCUMENT 202

165. Page 4, ¶5: It appears that the Offsites Manager will be the one to make formal requests to EPA when work is ready for verification testing, yet this information was not mentioned anywhere else in the work plan.

166. Page 11: As this job description is written, it seems possible that this position could be filled by someone with no health physics experience. Revise to require such experience.

167. General Job Descriptions Comment: There should be similar documents for the health physics on-site staff.

APPENDIX C, GAMMA RADIOLOGICAL SURVEY SOP -- DOCUMENT 210

168. Page 1, §1: A survey using a micro-R meter at a height of 3 feet will be very insensitive in finding hot spots. U.S. EPA is conducting the discovery and characterization work using a NaI detector with ratemeter. Kerr-McGee will not be able to use the correlations U.S. EPA is developing unless the same instrumentation is used. (Kerr-McGee indicated during our January 18th meeting that this procedure was being changed to use a NaI detector.) Also, clarify that these surveys will be used by Kerr-McGee during the preverification surveys.

169. Page 2, §5: The header includes the qualifier "Used During Air Monitoring" but the SOP does not address air monitoring.

170. Page 2, §5.1: The grid dimensions are not specified here. In other places the work plan states that a 10 x 10 meter grid will be used. This grid is too large for most of the residential properties, and also is not appropriate for small excavation areas.

171. Page 2, §5.2.1.2: The "slow" response setting should not be used. If full-scale travel takes 8 seconds, recorded results represent the average of a 4 meter path. This, coupled with the 1-meter probe placement, could cause small areas of localized contamination to be missed.

172. Page 3, §5.4.2.1: The sole use of gamma scans for separating and designating on-site material as "clean" is not adequate.

173. Page 4, §5.5.3: Off-site materials that exceed the background range for this site as determined by U.S. EPA shall not be used as backfill material.

174. Page 4, §5.7.1: Change "remedial" to "excavation." Change "ready for final survey" to "ready for a verification survey by U.S. EPA/IDNS.

APPENDIX C, CHAIN OF CUSTODY SOP – DOCUMENT 211

175. Page 5, References: The J.L. Grant & Associates QA/QC manual was not included in the submittal and does not appear to be referenced in the text (this also occurs in other documents). Please provide the document and show relevance.

APPENDIX C, AIR MONITORING SOP – DOCUMENT 212

176. Document 212, General Comments: (a) This procedure should include background air monitoring locations. (b) The method that will be used to compare Th-232 effluent concentrations to established limits should be provided. At the January 18th meeting we agreed that air monitoring will be performed only for the working day and modeling will be used for off-hours portion. (c) A TSP collection and analysis procedure should be provided for review.

177. Page 1, §1: The stated purpose (to determine the amount of contaminants leaving the site) could be interpreted to include material being transported away from the site in trucks. Please clarify the more limited intent (dust/fugitive emissions). The purpose of the Air Monitoring Procedure also includes sampling for worker protection and monitoring of work procedures and site control measures [Appendix B - Air Monitoring Plan (Document 102), §1.1 and §4.1.2].

178. Page 2, §5.1: How the locations for these monitors will be selected is not discussed.

179. Page 2, §5.1.1: Change "Healthy" to "Health."

180. Page 2, §5.1.3: State the location of air samplers with respect to wind direction. Fifty feet from the remediation area may be too far; the monitors should at least be at the perimeter of the restricted zone. In addition, the OSHA PEL applies to the worker's breathing zone and work area. A sample taken 50 feet away may not be representative of the worker's actual exposure.

181. Page 2, §5.2.2: State the MDA for the Ludlum Model 2929/43-10 alpha counting system. The MDA should be at least 10% below the guideline value stated in §5.4.2.2.

182. Page 3, §5.4: State the counting time for filter analysis.

183. Page 3, §5.4.1.1: A seven-hour wait before counting is different from the Kerr-McGee Radiation Protection Manual method of waiting four hours. A four-hour wait is preferable so that, if necessary, changes can be made as soon as possible.

184. Page 3, §5.4.2.4: If 32 IAC 340 is referenced, it should be clear that this is the January 1, 1994, amended version.

185. Page 4, §5.6.1.2: Duplicate or replicate analysis?

APPENDIX C, DATA REDUCTION, VALIDATION, AND REPORTING PROCEDURE – DOCUMENT 213

186. Page 3, §1.2.1, ¶1, line 2: The validation scheme cannot be reviewed without the laboratory QA plan, which was not provided in the initial submittal.

187. Page 3, §1.2.1, ¶2, line 5: What blanks are being run? The QAPP (Document 200) [pg 3-1, §3.1, ¶1, last line] indicates that field and trip blanks will not be utilized.

188. Pages 4 and 5, §1.3: The process described for the removal of outliers appears generally acceptable for use on a single population. The method is not suitable for global use on this project. Application of the method on a data set comprised of background and contaminated samples could lead to rejection of the contaminated samples as outliers, when in fact they are a valid but from a different population.

APPENDIX C, SOIL SAMPLING SOP – DOCUMENT 214

189. Page 1, Scope: As discussed in previous comments, backfill material must be within the background range established by U.S. EPA to be acceptable for use at this site. Revise this section accordingly.

190. Page 2, §2: Provide specific references to where the decontamination procedures are found.

191. Page 2, §3: As Kerr-McGee will be maintaining total control of the stockpiles during construction, there will be ample opportunity to perform sampling as the pile are built. Lift sampling should provide more representative samples than coring and is the preferred sampling method. The lifts should also be screened using gamma detecting instruments, implementing a system comparable to that used for discovery (100% gamma scan). The use of gamma scans is indicated in the Field Sampling Plan (Document 201) [pg 2-4, §2.2.2, ¶2] Also, SOP-210 states that gamma surveys are

performed "to verify that the backfill materials are acceptable for use...", but should be used in conjunction with soil sampling.

192. Page 2, §3, ¶2: Where are paragraphs 5.3 and 5.4 that are referenced in line 5?

193. Page 2, §3, ¶3: Core sampling to the center of the pile will provide representative results if the pile was built from a central point, yielding uniform layers. Discrete dumps can cause pockets of heterogenous material. The pockets at the bottom edges of the pile would be excluded from sampling, potentially resulting in a biased result. In addition, where is Figure 1 that is referenced in line 5?

194. Page 3, Note 2: The depth of the samples (thickness of sample layer) is not clear. Is it intended to composite a single sample from the material in each 10 foot horizon, or is a single discrete sample taken at the 10 foot increments? Discrete samples may lead to bias as they could represent the same physical lift.

195. Page 4: (a) In ¶2 (and elsewhere) the SOP references "steps 7 and 8" but there is not a complete description of the entire process. Please provide the stepwise procedure. (b) At the bottom of §3, what does "7" refer to? This is also contained in Attachment 1, Evaluation of Sampling Results. Does it refer to 7 pCi/g? If so, this must be changed. Soil must be within the normal background range established by U.S. EPA (not 5 pCi/g above background) to be acceptable for use as backfill material.

196. Page 5, §6.1: Several important steps seem to be missing, specifically the steps that deal with actually collecting the samples. (Similar steps are included in §6.2 on page 6.)

197. Pages 6 and 7, §6.2 and 6.3: (a) Auger sampling smears together materials of different horizons, preventing accurate analysis of subsurface conditions. Hollow core or split spoon sampling is required if the auger is to be used. (b) The decontamination procedure in Section 5.5 is referred to on these pages and on page 8, but there is no such section.

198. Page 7, §6.4: This section does not appear to describe lift sampling, but repeats the core sampling methodology. Lift sampling is preferred because samples are collected from each (or a random subset of) discrete load deposited on the stockpile. For example, a 50 yard pile formed by loads from a 10 yard dump truck would be composed of five lifts, the number prescribed by the chart on page 3.

199. Page 8, §7, ¶1: Change "should be cleaned" to "will be cleaned" and "should be followed" to "will be followed."

200. Page 9, §8.2: It appears that the Field Team Leader will both enter and review data for discrepancies. Different individuals should cover these tasks as a check on data entry accuracy.

201. Attachment 1, "Evaluation of Sampling Results": The page numbering of this section is out of sequence (the first page is numbered page 3).

APPENDIX C, FIELD LOGBOOK SOP – DOCUMENT 215

202. Page 1, §1.1.1: Field logbooks should not be used only by the Field Team Leader. Any field person taking measurements, observing tests, or performing any other related duty should have a personal logbook into which they keep a contemporaneous record of events and observations.

203. Page 2, §1.1.3: The log book should also include information on the amount of material excavated and levels of contamination found (if known).

APPENDIX C, WORK ORDER DEVELOPMENT SOP – DOCUMENT 216

204. Pages 1 and 2, §3.2: If U.S. EPA has already obtained access for the excavation/restoration work, a copy of the signed consent form also should be included as an input parameter.

205. Page 3, §3.4.4.1: Change to "Negotiate and obtain access, if not already obtained by U.S. EPA, for excavation/restoration work, and negotiate restoration condition."

APPENDIX C, EXCAVATION PROCEDURE – DOCUMENT 217

206. Page 1, §2: The meaning of "off-site areas" is not clear. Change it to "Residential Areas Site."

207. Page 2, §3.4: Revise this section in accordance with previous comments on the Pre-Verification Screening Sampling Plan.

APPENDIX C, SAMPLE HANDLING, PACKAGING, AND SHIPMENT SOP – DOCUMENT 218

208. General: This SOP appears to be a subset of, and redundant with, SOP-WCP320.

209. Page 4, §1.6.3, line 1: Should "warps" be "wraps"?

ADDITIONAL STANDARD OPERATING PROCEDURES

210. General Comment: All the SOPs included in this section must be listed on an index. Additionally, most of the SOPs seem to be written specifically for the REF. Are they meant to apply to the Residential Areas Site? If not, please explain why they are included. If so, then why are they not tailored for this site?

Radioactive Material Shipments SOP (WCP320)

211. General Comment: The SOP states that the requirements are applicable to all shipments to off-site locations. DOT shipping regulations apply to shipments over public roads. The requirements of this SOP should be applied to all over-the-road shipments of hazardous materials, including trips from Residential Areas Site properties to the REF. DOT defines radioactive material (exceeding 2,000 pCi/g total activity) as hazardous. Given 10 nuclides in the Ra-228 decay chain, a sample with 200 pCi/g Ra-228 could exceed 2,000 pCi/g total activity. Samples exceeding 200 pCi/g have been found on Residential Areas Site properties. The procedures used to determine the correct shipping requirements for each load of material are not specified.

212. Page 3: This Standard Operating Procedure (SOP) continually refers to Illinois shipping regulations. IDNS has copied the Dept of Transportation regulations. IDNS handles intrastate transportation, which the immediate residential cleanup will be. However, since this is a federal cleanup, involving the ultimate interstate transport of waste, the DOT regulations are the fundamental ones and are the preferred reference. Later, on page 7, the SOP switches to 49 CFR 172/173. Consistency is an issue.

DAC-Hr Exposure Assessment SOP (WCP331)

213. Page 1, §1.2: The term "exclusion zone" has not been defined for the Residential Areas Site properties.

Bioassay Program SOP (WCP332)

214. Page 1, §1.2: Revise the applicability to Residential Areas Site properties, if appropriate.

Access Control and Use of PPE SOP (WCP340)

215. Page 2, §3.2, and page 4, §5.1.3: 33 dpm/100 cm2 is an IDNS number and less restrictive than the NRC value in Regulatory Guide 1.86. The NRC value should be used.

Decontamination SOP (WCP347)

216. Page 2, §3.2: Same comment as #215 above.

CONSTRUCTION QUALITY ASSURANCE PROJECT PLAN – DOCUMENT 300

217. Pages 1-2 and 1-3, §1.1: This "Project Overview" section is very similar to §2.1 of the Removal Action Work Plan (Document 100). Revise in accordance with earlier comments on that section.

218. Page 2-1, §2.2, line 1: Replace "removal and replacement" with "excavation and restoration."

219. Page 2-2, §2.3, line 5: Replace "Site" with "Project."

220. Page 3-1, 2nd bullet: Add "and" after "excavation."

ATTACHMENT A, SPECIFICATIONS – DOCUMENT 301

221. Page 01010-1, §1.1.A., ¶2: The definition of the Residential Areas Removal Site in the UAO includes some Kress Creek Properties.

222. Pages 01010-2, §2.b: Revise this § in accordance with earlier comments on the need for permits (on-site vs. off-site).

223. Page 01010-3: In ¶1, last line, provide a specific citation for where this information is found in the work plan. In §C.2.d.(ii), change "IDNS" to "U.S. EPA." After §C.2.f., add steps to be taken if U.S. EPA/IDNS verification sampling shows additional excavation is necessary.

224. Page 1020-5: In §3.3.D, provide an alternate method of disposal if the REF is not authorized to install and operate a pretreatment system for wastewater. (Comment also applies to page 1020-9, §B.3.)

225. Page 1020-6: §3.5 states that two air monitors will be used on each property, as opposed to a minimum of two. Revise to be consistent with other documents.

226. Page 1020-7: (a) In §A.1, last line, change "will" to "will be." (b) §A.2. states that a canvas tarp will be placed over the load prior to exiting the contaminated area – this information should be included in the work plan (see earlier comments). (c) §A.3. refers to a truck decontamination procedure in subpart 3.2H, but there is no such subpart.

227. Page 1020-8: §A and B contain statements about decontamination and frisking of vehicles, etc. This sort of information should be included in the work plan, also.

228. Page 1030-3: (a) §3.3 contains the procedures Kerr-McGee will use to notify U.S. EPA that the pre-verification survey is complete and to request a verification survey before backfilling. This information should be in the work plan, also. Note, however, that U.S. EPA will provide official notification to Kerr-McGee as to when the excavation can be backfilled. (b) In §3.4, ¶1, state that the final report will be submitted to U.S. EPA. (c) In §3.4.L, change "RD/RA" to "Removal" or "Excavation/Restoration."

229. Page 1340-2: In §3.4.B, delete "IDNS." All IDNS comments will go through U.S. EPA.

230. Page 1560-3, §3.3.A: Visible dust might also indicate that some other dust control methods or change in construction activities is necessary.

231. Page 1560-4: Regarding §3.4.C, what chemical wastes is this referring to?

232. Page 2010-5: §3.3 describes tree removal. Define what is meant by "chemically clean" since Kerr-McGee will not be testing for chemical contaminants. Would such material be considered landscape waste? Is landfilling the appropriate disposal method?

233. Page 2010-6: (a) In §B.4, specify that such materials would be transported to the REF for ultimate shipment to Envirocare. (b) In §C, what foundations would be demolished? Elsewhere in the documents Kerr-McGee states that demolition of buildings is not currently anticipated, but if required, would be addressed by supplemental documents.

234. Page 2010-12: It appears that the varied references to "work plan" on this page should be "work order."

235. Page 2200-6: U.S. EPA will not provide much depth information to Kerr-McGee, contrary to the statement in §B.1.

236. Page 2200-11: §F.a.(1) at the top of the page is unacceptable and must be revised. All backfill material must be within background ranges as established by U.S. EPA.

237. Page 2200-15: In §2.e.(2), change the 2nd line to "...(IDNS) for U.S. EPA and written authorization by U.S. EPA and..."

238. Page 2200-25: The values in Table 02200-1 are from the Illinois code and are not as restrictive as those from the NRC. The more restrictive (NRC) values should be used.

239. Page 2420-6: §2.a.(1) at the top of the page is unacceptable and must be revised. All backfill material must be within background ranges as established by U.S. EPA.

HEALTH AND SAFETY PLAN – DOCUMENT 400

240. General: (a) U.S. EPA does not approve Health and Safety Plans, but only offers comments. (b) The appendices should have tabs so they are easier to find. (c) Please specify whether U.S. EPA and IDNS personnel are to be considered visitors. Will they be working under Kerr-McGee's Health and Safety Plan or their own?

241. Page 3-1: Will the Health and Safety Coordinator (HSC) be radiation trained and radiation experienced?

242. Page 4-1, Box: Inhalation of radons is also possible (e.g., heavily contaminated house) and should be listed as well. In addition, direct exposure to gamma radiation is an important exposure route.

243. Page 7-2, ¶1: Time allowed for decay could be specified here.

244. Page 7-2, §7.5 and 7.6: Instruments could be listed here.

245. Page 7-4, Table 7-1: The reference for these action levels should be given.

246. Page 10-1, §10.1: Suggest revising line 1 to read, "All personnel who will be present on the site will be provided with a copy..."

247. Appendix B, Kerr-McGee Radiation Protection Manual: (a) On page A-4-1, last line, 312 mrem/quarter is an odd number. Does it represent 1/6 of 5000 mrem/yr, the present occupational limit? Please explain. (b) Page A-6-2, table 6-1, was incompletely copied. Please provide the entire page in the revised submittal. (c) Page A-11-12, §11.5.3.4, para. 2 – This paragraph uses 4+ hours for decay, which is standard procedure. The rest of the document should correspond to this.

EMERGENCY CONTINGENCY PLAN – DOCUMENT 500

248. General: It would be helpful if the plan contained a map (and narrative directions) showing possible routes to the hospital from various locations around the West Chicago area. In addition, the Field Team Leader should maintain and keep current a list of project personnel working in the site area. The list should include names,

addresses, phone numbers, training descriptions and job assignments for each employee. This list could be used to conduct formal role call to make sure all employees are accounted for.

249. Page 2-3: Kerr-McGee should double-check all phone numbers. (For example, the listed number for Rebecca Frey is incorrect.) In addition, U.S. EPA, IDNS, IEPA and the City will need to be provided with a current list of all emergency contacts/phone numbers in case of an emergency incident. The contacts should include individuals available on nights and weekends as well as during normal business hours.